

# Septic Systems for the 21<sup>st</sup> Century

Help shape the future!

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Septic systems are ...

Part of our Wastewater Infrastructure\* ...

- ~ 600,000 systems in Puget Sound Counties
- Septic systems now serve 1/3 of the homes in our counties
- 80,000 – 100,000 OSS in our county

\*Wastewater Infrastructure = Sewage Treatment Plants + On-site Sewage Systems (Septic Systems)

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# Who deals with septic systems?

- Decision makers
- Staff
- Professionals
- Industry
- Citizens
- Washington State DOH – make rules
- Local Health Jurisdictions – adopt, follow and enforce rules
- Industry professionals – follow rules and provide service
- Realtors – inform owners when buying
- Owners – use the systems!



# Who deals with septic systems?

- Environmental Protection Agency
- Washington State DOH – make rules
- Local Health Jurisdictions – adopt, follow and enforce rules – Permit NEW or Repairs
- Water reuse is permitted by State agencies:  
Ecology and Health
- Systems greater than 3,500 gallons per peak flow day are permitted by state health

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# What's the big deal with septic systems?

Been around forever

But a growing population  
and a changing paradigm

Social Equity and Justice issues!

Bottom Line for the 21<sup>st</sup> Century

Protect

- Public Health
- Water resources
- Owner investment
- Sustainable Development

Old paradigm: Keep it  
underground!

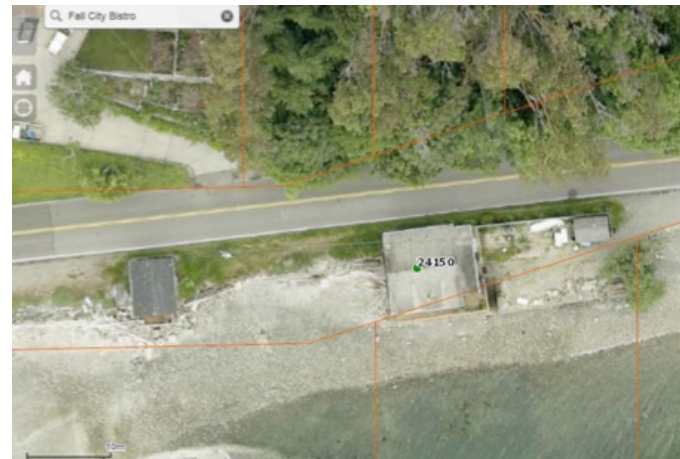
New paradigm: Performance! ...  
Treat the sewage before it reaches ground  
or surface water.

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# What's the big deal with septic systems?



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# What's the big deal with septic systems?







# Protection of Public Health requires management of OSS

- Untreated or partially treated sewage from failing septic systems can cause:
  - Illness – mild to serious
  - Pollution of water resources
  - Decommissioning of drinking water wells
  - Closure of commercial shellfish beds
  - Closure of swimming beaches
  - Closure of restaurants
  - Sewage isn't any cleaner than it's ever been!

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# Protection of Water Resources

- Water quality degradation
- Any restrictions on commercial shellfish harvesting have an economic impact on local economies.
- All 12 Puget Sound counties have commercial shellfish operations, and all have been subject to closures at some time in the past decades.
- Current State rules require that counties establish Marine Recovery Areas when commercial shellfish growing areas are closed. Pollution sources must be identified and the means to correct them set in motion.



# Protection of Water Resources – Drinking Water

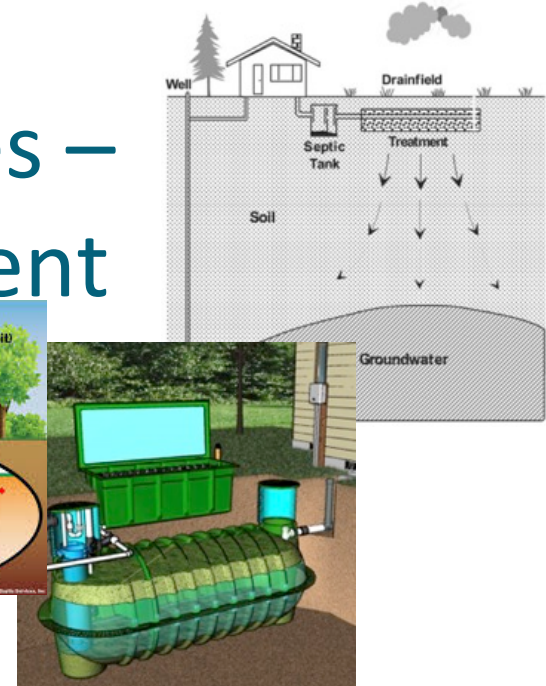
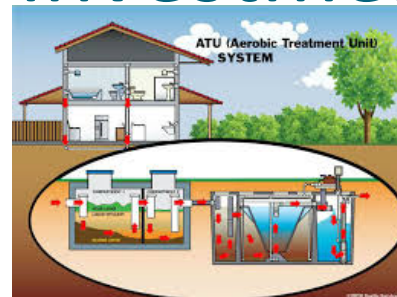
- Yes, septic systems that do not fully treat sewage before entering ground water can impact drinking water wells.
- Rules are set for the distance between a septic system and a well. However, sandy or gravelly soils can transport partially treated sewage to shallow drinking water wells.

# Protection of Water Resources – Protection of Owner Investment

## Financial issues

- No big secret ... a new septic system costs between \$8,000 and \$80,000 in King County
- Goal: avoid big costs
- Practice good household habits
- Routine inspections
- Pump tank(s) on schedule
- Make minor repairs

[http://www.biomicrobics.com/assets/new\\_singlebiobarrier\\_works2.flv](http://www.biomicrobics.com/assets/new_singlebiobarrier_works2.flv)



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# Septic Systems have BIG Benefits

- Provide good wastewater treatment
- Protect of public health and environment
- Cost savings
- Design for difficult site conditions
- Enhanced treatment
- Recycle water
- Living Building Challenge



## How to manage OSS and assure treatment of sewage?

To assure treatment ...

- Sewers are managed no matter how big or small
- Should septic systems be included in a management framework?

**Rely on Users to know and do what's required of them.**

Fewer than 20% will have inspections and maintenance done – often for property sales.

**Local Health Jurisdiction with a program to notify, educate, require, track and assure proper operation and maintenance.**

More than 80% of users in a regulated program complete inspections and needed repairs.





## Critical components to manage OSS

- Authority – who is requiring?
- Expectations – what is required?
- Accountability – who follows up?
- Enforcement – what happens if work isn't done?





# Critical components to manage OSS

- **Authority – who is requiring?**
  - **Federal Law - Clean Water Act §319 (33 USC §1329)**, requires states to address non-point source pollution
  - **WA State Laws & Rules –**
    - RCW 70.05.060, BOH Authority to Protect Public Health
    - RCW 70.118, On-Site Sewage Disposal Systems (OSS)
    - RCW 70.118A, OSS – Marine Recovery Areas
    - RCW 90.48, Water Pollution Control
    - RCW 90.72, Shellfish Protection Districts
    - WAC 246-272A-0015, Local Management and Regulation of OSS
    - WAC 246-203-100 Disposal of Human Excreta
  - **King County Board of Health Code - Title 13.60, OSS Operation and Maintenance, Monitoring and Management**

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# Puget Sound County OSS programs

## Rules governing

- Siting
- Design
- Installation
- Operation & Maintenance
- Repair
- Abandonment

## Activities include:

- Inventory of all OSS
- O&M Requirements
- Inspection notification
- Reporting of inspections and pump outs
- Education options
- Oversight of industry
- Compliance
- Financial support to pay for repair, replacement, or hook-up to sewer
- Living Building Challenge & Greywater reuse



# Management Framework Benefits

- Clear expectations
- Protects investment
- Consumer protection
- Fewer failures
- Protects public health
- Protects water resources
- Stable program
- Adaptive management



# A successful program will realize

- Goals achieved
  - Protection of public health
  - Protection of water resources & shellfish harvesting treaty rights
  - Protection of OSS owner investment



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